

Palæartic Region will be found in these pages. The fact that the eggs of the Osprey taken from the nests of American birds may be distinguished by their "strong musky smell" is a case in point. But it seems hardly necessary to tell us that Ducks and Pelicans swim well! Yet Mr. Dresser gravely assures us that this is a fact!

## MISCELLANEOUS.

### *On the Ossiferous Cave-deposits of Cyprus.*

By DOROTHY M. A. BATE.

PREVIOUS to 1901 no systematic search of the cave-deposits of Cyprus appears to have been attempted. The geology was studied by M. Albert Gaudry, who published an elaborate work in 1862 with a geological map, and Drs. Unger and Kotschy in 1865 also gave a geological map of the island, differing somewhat from their predecessor.

As long ago as 1700 the Dutch traveller Corneille le Brun (Van Bruyn) published an account of his wanderings in Cyprus and the Levant, and mentions having visited a bed of bones, supposed to be those of saints, not far from the Monastery of Haghios Chrysostomos. A drawing of one of these bones is given, which Dr. Forsyth Major has since shown to be that of *Hippopotamus minutus*\*.

The author started in 1901, in expectation of discovering an extinct fauna in this ossiferous breccia, and this expectation was amply fulfilled, for no fewer than twelve ossiferous caves were found—five at Cape Pyla in the south-east, and seven on the southern slopes of the Kerynia Hills in the north of the island.

Two caves (mentioned by General di Cesnola in 1877, at Cape Pyla, as containing *human* fossilized bones) were first visited by the author. The rock is here composed of Miocene (probably Helvetian) limestone, weathered to a very great extent, and full of marine shells and corals, as well as numerous Echinoids (*Clypeaster portentosus*), also met with in the Miocene limestones of Malta.

Here a number of caves were discovered in the cliffs, five of which yielded remains of *Hippopotamus minutus*.

The author then describes these caves in detail. The caves explored at Cape Pyla were:—(1) The Red Cliff Cave; (2) the Great Anonymous Cave; (3) the Small Anonymous Cave; (4) Haghios Jannos; (5) Haghios Saronda. This is the cave to which formerly pilgrimages were made and candles burned in honour of the sacred remains of saints.

The cave-deposits of the Kerynia Hills are of uncertain geological age, no fossils having been obtained from the limestone-rock of

\* Proc. Zool. Soc., June 1902.

which they are chiefly composed. Professor Gaudry concludes that the rock is of Cretaceous age, and therefore the oldest sedimentary deposit in the island. The seven caves discovered were all on the southern side of the range, between the Aghirdhir Pass and the village of Kythraea, in a low broken line of cliffs parallel with the main ridge. These are called the Kerynia caves and are named:— (1) Coutzaventis; (2) Haghios Chrysostomos; (3) Anoyero Spelios; (4) Dikomo Mandra; (5) Haghios Elias; (6) the Elephant Deposit; (7) the Western Cave.

Most of these caves have, by reason of long atmospheric erosion, partially or wholly disappeared, leaving the stalagmitic flooring containing mammalian remains unprotected and exposed often at a considerable distance from the face of the cliffs. But although many of them are now almost obliterated by the falling in of the roof and walls, the author points out that wherever this has happened the limits of the floor are sharply defined by the hard ossiferous deposit and the stalagmitic floor. In close proximity are caves still preserved containing precisely similar deposits.

The fauna of the caves is comparatively scanty, the only other important extinct form besides the dwarf elephant and hippopotamus being a new species of genet (*Genetta plesictoides*), described in the 'Proceedings of the Zoological Society.'—*From the Proceedings of the Royal Society*, June 9, 1904. (Communicated by the Author.)

*Further Note on the Remains of Elephas cypriotes, Bate, from a Cave-deposit in Cyprus.* By DOROTHY M. A. BATE.

This paper is a continuation of one *already published*\* "On the Discovery of a Pigmy Elephant in the Pleistocene of Cyprus," and enters into a detailed description of the teeth of this small proboscidean whose remains are now in the British Museum of Natural History.

The collection includes incisors, milk-molars, and permanent molars. Several of the latter still retain their position in the jaws, and, in some instances, the teeth of both sides of the same individual were found.

The permanent incisor tusks of two forms, presumably belonging to males and females, were found. They differ from the same teeth of the Maltese dwarf elephants in being considerably compressed laterally. The largest specimen measures 29·7 cm. along the outside of the curve, with a maximum diameter of 3·7 cm.

Of the upper cheek-teeth the third and fourth of the milk-series as well as the three permanent molars are described in detail. There was a small third milk-molar (2 mm.) implanted by a single root, but no specimen was collected.

\* Read before the Royal Society, May 7, 1903.

Of the lower series the third and fourth milk-molars and the three permanent teeth were represented by numerous examples and are fully described.

An almost entire left ramus of one young individual and the symphysial portion of another are also described. The only limb-bone obtained was the distal portion of a femur.

A corrected ridge-formula for the molars of *E. cypriotes* is furnished, which, exclusive of talons, will stand as follows:—

$$\div, \begin{array}{cccc} 5 & 7-8 & 7-8 & 8-9 & 11-12 \\ \hline 5' & 7-8' & 7-8' & 8-9' & 11-12' \end{array}$$

Dr. Leith Adams gives *E. melitensis* as follows:—

$$\begin{array}{cccc} 3 & 5 & 8-9 & 8-9 & 10 & 12 \\ \hline 3' & 5' & 8-9' & 8-9' & 10' & 12' \end{array}$$

There appears to be a strong resemblance between the teeth of *E. cypriotes* and those of the Maltese and Sicilian pigmy forms, more especially *E. melitensis*, but the marked lateral compression of the tusks in *E. cypriotes*, which is a constant character in all the specimens so far obtained, would in itself be almost sufficient to distinguish this species from the other pigmy elephants of the Mediterranean region. There seems to be good evidence that *E. cypriotes* was isolated and subsequently differentiated at an earlier period than the other small Mediterranean species in Malta and Sicily, the zoological evidence giving considerable support to the belief that Cyprus became an island at an earlier period, an idea which is further strengthened by the fact that the whole island is surrounded by deep water and is not connected with the neighbouring lands by submerged banks, as is the case with the Maltese islands.

The Maltese pigmy species have been considered most closely allied to *E. antiquus* and *E. africanus*. On the other hand, it seems probable that *E. cypriotes*, which shows no affinity to the African species, is rather connected with *E. antiquus* and *E. meridionalis*.

It may be remarked that the remains of *E. cypriotes* and of *Hippopotamus minutus*, with which it is associated, vary but little in size, whereas in the dwarf species of elephants and hippopotami from Malta and Sicily a considerable variation in size is observable, so much so, indeed, that molars may be seen intermediate in size connecting *H. melitensis* (= *minutus*), *H. pentlandi*, and *H. amphibius*. —From the Proceedings of the Royal Society, June 9, 1904. (Communicated by the Author.)